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(54) SINTERED PERMANENT MAGNET MATERIAL AND ITS PRODUCTION

(57)Abstract:

PURPOSE: To obtain a permanent magnet having superior magnetic properties by incorporating Cu to a rare-earth sintered permanent magnet containing Fe-B-rare earths as a basic series and also containing Co and subjecting the above magnet to sintering and then to heat treatment under specific conditions.

CONSTITUTION: Powdered raw materials are mixed so that they are formed into a composition consisting of, by atom., 12W17%, in total, of Nd and Pr, 5W14% B, <20% Co, 0.02W0.5% Cu, and the balance Fe, which is pulverized in an inert-gas atmosphere of Ar, etc. The above powdered raw materials are compacted in a magnetic field and the resulting green compact is sintered in a reducing or nonoxidizing atmosphere at 900W1,200° C, and the sintered compact is subjected to heat treatment in vacuum, in an inert-gas atmosphere, or in a reducing atmosphere at 430W600° C for about 5minW40hr. By this method, the sintered permanent magnet having high coercive force, and superior square characteristic in demagnetization curve can be obtained.

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